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IEE 578 – Regression Analysis (Fall 2019)

Preliminary Project Report

WORLD HAPPINESS REPORT

This report is a landmark survey of the state of global happiness for the year 2017 that ranks 155 countries by how happy their citizens perceive themselves to be. It focuses on how happiness has evolved over the past dozen years, with a focus on the technologies, social norms, conflicts, and government policies that have driven those changes. Leading experts describe how measurements of well-being can be used effectively to assess the progress of nations. The report reviews the state of happiness in the world today and show how the new science of happiness explains personal and national variations in happiness.

The purpose of selecting this data set is to analyze what countries or regions rank the highest in overall happiness and different factors contributing to happiness.

For the regression analysis, the **response** variable is the **Happiness Score**.

The **regressors** or the **predictors** variables are the –

- (1) Economy or GDP per capita
- (2) Social Support
- (3) Healthy Life Expectancy
- (4) Freedom
- (5) Generosity
- (6) Corruption

The regressors and the response variable will follow multilinear regression analysis as the number of regressors is more than one. All the variables are continuous. The number of observations is 155 with six regressors columns and one response variable column.

All the regressors contribute to making life evaluations higher in each country than they are in **Dystopia**, a hypothetical country that has values equal to the world's lowest national averages for each of the six factors. They have no impact on the total score reported for each country, but they do explain why some countries rank higher than others. The purpose in establishing Dystopia is to have a benchmark against which all countries can be favorably compared in terms of each regressor. The lowest scores observed for the six predictors characterize Dystopia.

The sample values in the entire data set are –

For Ireland, happiness score 6.97700023651123, GDP per capita 1.53570663928986, social support 1.55823111534119, healthy life expectancy 0.80978262424469, freedom 0.573110342025757, generosity 0.42785832285881, and corruption 0.29838815331459.

The source of the data set –

<https://www.kaggle.com/unsdsn/world-happiness#2017.csv>

This is an established website which contains the data sets for many numbers of experiments.